

System and Method for Grouping Processors**ABSTRACT**

A system and method for grouping processors is presented. A processing unit (PU) initiates an application and identifies the application's requirements. The PU assigns one or more synergistic processing units (SPUs) and a memory space to the application in the form of a group. The application specifies whether the task requires shared memory or private memory. Shared memory is a memory space that is accessible by the SPUs and the PU. Private memory, however, is a memory space that is only accessible by the SPUs that are included in the group. When the application executes, the resources within the group are allocated to the application's execution thread. Each group has its own group properties, such as address space, policies (i.e. real-time, FIFO, run-to-completion, etc.) and priority (i.e. low or high). These group properties are used during thread execution to determine which groups take precedence over other tasks.